

WHAT IS CLAIMED IS:

1. A two-part adhesive system comprising:

(a) an adhesive part being a mixture formed from (I) an ethylenically unsaturated monomer, (II) a metal molybdate, (III) a metal salt of an ethylenically unsaturated carboxylic acid in an amount less than 3 weight percent, and (IV) an ethylenically unsaturated carboxylic acid; and

(b) an activator part which includes a free radical generator.

2. The adhesive system of claim 1, wherein said ethylenically unsaturated monomer is an acrylate or methacrylate ester monomer.

3. The adhesive system of claim 2, wherein said ethylenically unsaturated monomer is methyl methacrylate.

4. The adhesive system of claim 1, wherein said adhesive part further comprises an admixed elastomeric material having a T_g less than -25°C and soluble in said ethylenically unsaturated monomer.

5. The adhesive system of claim 4, wherein said elastomeric material is selected from the group consisting of polychloroprene, polyacrylonitrile-butadiene copolymers, copolymers of styrene and isoprene, copolymers of styrene and butadiene, carboxylated polychloroprenes, carboxylated polyacrylonitrile-butadiene copolymers, copolymers of ethylene and vinyl acetate, copolymers of styrene and olefinically unsaturated hydrocarbons, polybutylene, acrylate-based elastomers and mixtures thereof.

6. The adhesive system of claim 5, wherein said elastomeric material is polychloroprene.

7. The adhesive system of claim 1, wherein said adhesive part further comprises an admixed phosphorous-based adhesion promoter.

8. The adhesive system of claim 7, wherein said phosphorous-based adhesion promoter is an acrylate or methacrylate ester phosphate.

9. The adhesive system of claim 1, wherein said adhesive part further comprises an admixed core-shell impact modifier swellable in said ethylenically unsaturated monomer.

10. The adhesive system of claim 9, wherein said core-shell impact modifier is selected from the group consisting of MBS impact modifiers, ASA impact modifiers, ABS impact modifiers and mixtures thereof.

11. The adhesive system of claim 10, wherein said core shell impact modifier is methacrylate-butadiene-styrene graft copolymer.

12. The adhesive system of claim 1, wherein said metal of said metal molybdate is an divalent metal.

13. The adhesive system of claim 12, wherein said divalent metal is zinc.

14. The adhesive system of claim 1, wherein said metal salt of said ethylenically unsaturated carboxylic acid is a divalent metal salt.

15. The adhesive system of claim 14, wherein said unsaturated carboxylic acid is acrylic or methacrylic acid.

16. The adhesive system of claim 15, wherein said divalent metal salt of acrylic or methacrylic acid is zinc dimethacrylate.

18. The adhesive system of claim 1, wherein amount of said metal salt of said ethylenically unsaturated carboxylic acid is from about 0.25 to about 2.5 weight percent.

19. The adhesive system of claim 18, wherein said amount is from about 0.5 to about 2 weight percent.

20. The adhesive system of claim 1, wherein said adhesive part and said activator part are in a ratio from about 20:1 to about 1:1.

21. The adhesive system of claim 20, wherein said ratio is from about 15:1 to about 4:1.

22. The adhesive system of claim 1, wherein said free radical initiator is selected from the group consisting of peroxides, hydroperoxides, and mixtures thereof.

23. The adhesive system of claim 22, wherein said free radical initiator is benzoyl peroxide.

24. The adhesive system of claim 1, wherein said adhesive part further comprises at least one admixed reducing agent.

25. The adhesive system of claim 1, wherein said activator part further comprises an admixed epoxy resin.

26. The adhesive system of claim 25, wherein said epoxy resin is a diglycidyl ether of Bisphenol-A.

27. The adhesive system of claim 1, wherein said activator part further comprises an admixed plasticizer.

28. The adhesive system of claim 1, wherein said unsaturated carboxylic acid is acrylic or methacrylic acid.

29. A curable adhesive composition comprising a mixture of an adhesive part and an activator part, wherein the adhesive part includes (I) an ethylenically unsaturated monomer, (II) a metal molybdate, (III) a metal salt of an ethylenically unsaturated carboxylic acid in an amount less than 3 weight percent, and (IV) an ethylenically unsaturated carboxylic acid, and wherein the activator part includes a free radical generator.

30. A laminate comprising a first substrate and a second substrate bonded thereto with a cured adhesive composition comprising in an uncured state a mixture of an adhesive part and an activator part, wherein the adhesive part includes (I) an ethylenically unsaturated monomer, (II) a metal molybdate, (III) a metal salt of an ethylenically unsaturated carboxylic acid in an amount less than 3 weight percent, and (IV) an ethylenically unsaturated carboxylic acid, and wherein the activator part includes a free radical generator.

32. A method of preparing a laminate which comprises contacting a surface of a first substrate with a surface of a second substrate with an adhesive composition therebetween, wherein said adhesive composition comprising a mixture of an adhesive part and an activator part, wherein the adhesive part

includes (I) an ethylenically unsaturated monomer, (II) a metal molybdate, (III) a metal salt of an ethylenically unsaturated carboxylic acid in an amount less than 3 weight percent, and (IV) an ethylenically unsaturated carboxylic acid, and wherein the activator part includes a free radical generator.

33. The method of claim 32, wherein said substrates are selected from the group consisting of plastics, metals and combinations thereof.

34. The method of claim 32, wherein said surfaces of said substrates omit a primer prior to contacting.

35. A two-part adhesive system comprising:

(a) an adhesive part being a mixture formed from (I) an ethylenically unsaturated monomer, (II) a metal molybdate, (III) an ethylenically unsaturated carboxylic acid, wherein said adhesive part is substantially free of a metal salt of an ethylenically unsaturated carboxylic acid; and

(b) an activator part which includes a free radical generator.